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GENERAL NOTES.

Liquid exudation in Mahonia.—"The same observer detected a similar exudation from the pistil"—in *Mahonia*, the itemizer should have added. See p. 163, line 20.—T. M.

Some California Plants.—On the last day of the old year the following plants were in bloom under three inches of snow in the vicinity of Oakland:

Ranunculus Californicus	Boisduvalia densiflora
" Bloomeri	Oenothera ovata
*Eschscholtzia Californica	*Cotula coronopifolia
Cardamine pauciseeta	*Grindelia robusta, var.
Lepigonum macrothecum	Wyethia helenoides
Claytonia perfoliata	Troximon grandiflorum
Erodium cicutarium	Megarhiza Californica
Lupinus Chamissonis	Garrya elliptica
Vicia Americana, var.	Solanum umbelliferum
Lathyrus vestitus	Cynoglossum grande
Fragaria Californica	Castilleja foliolosa
Rubus ursinus	Scutellaria tuberosa
Ribes Menziesii	*Umbellularia Californica
* " sanguineum	Dirca occidentalis

The asterisk marks species usually in bloom by Christmas. *Eschscholtzia*, *Cotula* and *Grindelia* are everblooming. *Claytonia* and *Erodium* are annuals. Besides these plants, "hold-overs" of the dry season, such as *Solidago*, *Aster*, *Gnaphalium*, etc., were seen in bloom. The introduced weeds *Raphanus*, *Brassica*, *Capsella*, *Anagallis*, *Urtica urens*, etc., were plentifully in bloom. Our first rains were followed by unprecedentedly warm weather which lasted till near the middle of December. Since Christmas it has been remarkably cold.—VOLNEY RATTAN, *San Francisco*.

Plantago pusilla, Nutt.—The ordinary form of Missouri and Illinois, where it is common, and as far as I can see of the Eastern States, where it is much rarer, has linear or filiform entire leaves, scapes 2 to 4 or rarely 6 inches high, obtusish or subacute bracts of the length of the orbicular sepals and short oval slightly exsert capsules, 4 seeds about 1.3 mm. or 0.6 line long.

Var. **MACROSPERMA** is a larger form, 4 to 7 inches high, with longer, much exsert capsules; seeds nearly twice the length of the last, 2.4 mm. or 1.2 lines long.—Saline soil of the western plains; on the Shienne River, *Nicollet*, and near the mouth of the Yellowstone River, *Hayden*.

Var. **MAJOR**, much larger and stouter, leaves lanceolate-linear, often $1\frac{1}{2}$ to 2 lines wide, the larger ones lacinate with few long teeth or lobes; scapes densely woolly at base, with the elongated spike often 9 inches high; bracts acute, longer than the sepals; seeds intermediate in size between the two other forms.—Near Atoka, north of Red River in the Indian Territory, *G. D. Butler*.

Dr. A. Gray thinks that he has proofs that this species, or probably the second form of it, is the lost *P. elongata*, Pursh, Fl. Suppl. p. 729,

but even if so, Nuttall's name, now well known since more than 60 years, ought to be retained in place of a doubtful and very inappropriate one.—The three closely allied species, *P. Bigelovii* and *P. pusilla* with 4 seeds, and *P. heterophylla* with numerous ones, have all pitted seeds, well seen only in perfectly mature specimens. The seeds become gelatinous when wet.—G. ENGELMANN.

Forest Fires in Oregon.—The forests of Eastern Oregon are found only at an elevation of 3,500 to 4,000 feet and upwards. Fires, when the growth is thick, as it commonly is, destroy everything. The first plant to occupy the land is *Epilobium spicatum* (called "Elk Weed" here). This seems to be the only herbaceous plant to follow the fires. In a year or so the ground is occupied by seedlings of the same species that covered it before, viz: Black Pine (*P. contorta*, var.) and Red Pine (*Pseudotsuga*); also, in about their usual proportion, the three or four other coniferous species common to this region. The young growth is commonly very dense and grows rapidly. In 15 or 20 years the saplings will be 20 to 30 feet high and 2 to 4 inches in diameter, the pine occupying the ground mostly.

In Western Oregon it seems to take more time to replace the destroyed forests. The trees are much larger and are slower to decay. The ground is soon covered by a thick growth of blackberry plants (*R. ursinus*) and also raspberry, the latter more scattering. With these the seedling forest trees have to contend. But in time they overcome them and occupy the land exclusively, as did their ancestors. In the coast mountains there appears to be an exception to the rule that the burned forest is soon replaced by young trees of the same species. There is a large section of the country lying between the Willamette Valley and the Gaquinna Bay in which the forest growth, which must have been very thick, has been entirely destroyed. This region is now thickly covered by a growth of Cherry (*P. emarginata*), which occupies the land to the exclusion of almost everything else. The thick growth no doubt preventing, as it apparently has done for 40 or 50 years and seems likely to for all time to come, the young conifers from getting a hold.—WM. C. CUSICK, *Union, Oregon*.

Elastic Stamens of *Urtica*.—The curious discharging of pollen by the elastic stamens of *Pilea microphylla*, Liehm., the "Artillery plant" of our window gardens, coupled with the text-book assertion that in the sub-order *Urticeæ* the filaments are "transversely wrinkled and inflexed in the bud, straightening or spreading elastically when the flower opens," are reasons enough for expecting a forcible discharge of pollen in our common nettles. This discharge seems to take place only under the most favorable circumstances however, for a long observation of the nettles failed to reveal any extraordinary phenomena. It was a pleasant surprise to suddenly observe last fall a huge plant of our common *Urtica gracilis* enveloped in a shower of pollen. The plant grew on heavy muck,

and was consequently growing rapidly. The day was excessively hot and sultry, a thunder shower having passed but a short time previously. The discharge of pollen was so copious as to attract one's attention for several rods. By examining the flower buds with a glass the tips of the sepals could be seen to gradually spread apart, to be in two or three minutes suddenly laid open by the straightening of the stamens. Usually two opposite stamens would straighten at the same time, though often but one at a time. Frequently all four would pop out of their cramped position at once. The anthers opened simultaneously with the liberation of the stamens, and the pollen was thrown five or six inches. The stamens straightened themselves to a perfectly horizontal position, the filament usually twisting half or a quarter way round at the same time. The stamens on a severed branch of the plant continued to open elastically for five or ten minutes. Subsequent observations after showers in warm weather when the plant was growing vigorously often revealed the pollen discharge, but in very much less quantity and vigor than in the first case. The phenomenon could never be observed in *Urtica dioica*. No doubt proper culture in a hot-house would discover our common nettle to be one of our most interesting plants, at least much more so than the little *Pilea*!—L. H. BAILEY, JR., *Cambridge, Mass.*

C. S. Rafinesque.—The generally accepted impression that he was a Sicilian is probably incorrect. At least he tells us in his "*Life and Travels*," "I was born at Galeta, near Constantinople, inhabited by Christian merchants and traders, my father being a French merchant of Marseilles."

In addition to Rafinesque's genera "in the region covered by Gray's Manual," *Pachystima* may be added, discovered since the last edition of the Manual appeared, though not the species on which the genus was founded.

When I was a young man in Philadelphia, thirty years ago, some of Rafinesque's contemporaries were still living. His chief home was here, and here in a dingy garret, with scarcely a loaf of bread to eat, he worked for science, as he understood it, to the last. He died on a cot with hardly a rag to cover him, and without a solitary friend to stand by him in his last hours. Bringhurst, a kind hearted undertaker, committed his body to the earth, and for years a pine board with "C. S. R." was all that marked his last resting place.

From all I have been able to learn from those who knew him, and from what I have been able to gather from his writings, the summary in the GAZETTE scarcely does him justice, though perhaps justified by the statements heretofore published by those who had but imperfect knowledge of the man. It can scarcely be said of him that "he preferred self to truth" in the common acceptance of these terms. He endured rarely paralleled misfortunes, and sacrificed a large fortune for the sake of science, and it is doubtful if what the world understands as "truth" was ever sacrificed to anything by Rafinesque. His remarks on

his contemporaries were often sharp, and naturally excited aversion, and perhaps to this aversion we may refer some of the omission to receive as much credit as might be his due. But he often speaks admiringly of those he had lanced, and it is evident that, unwise in his discourtesy, it was not at any rate engendered in malice.

But he made species? Not long ago I read the introduction to a work in which the author complained that of some hundred or more species he had described, a contemporary had done him the gross injustice of not leaving him a dozen! It is no uncommon fault.

And he was an egotist? But I have lived to learn that in this respect at least "every man has his price." Let us meet in spirit around his unhonored grave in old Ronaldson Cemetery, remembering his sacrifices, grateful for what he did, and tried to do, and not forgetting that we too are but human as was he.—THOMAS MEEHAN.

EDITORIAL NOTES.

IT MAY SEEM to some that we have departed somewhat from the natural order of things in selecting Dr. Torrey as the subject of the second sketch in our series of "Some N. Am. Botanists;" but we are compelled to publish these sketches, not as we would, but as we can.

THE AMERICAN MONTHLY MICROSCOPICAL JOURNAL begins the new year with S. E. Casino, of Boston, as publisher and every evidence of prosperity. When an editor can be relieved from all clerical work his literary work is that much better and we now expect from Mr. Hitchcock a journal even more entertaining than it has been.

PROFESSOR G. MACLOSKIE, of Princeton, presented at Montreal a paper on "Achenial Hairs and Fibers of Compositæ," which now appears illustrated in the *Naturalist*. The object of his study seems to have been an attempt to discover some additional tribal characters, a thing very acceptable in this large and very homogeneous order. If the characters from the achenial hairs, etc., prevail it will necessitate considerable readjusting of tribes, "yet the parallelism between the structure of the hairs and the affinities of the groups, as founded on other characters, is singularly complete."

DR. L. ERRERA finds glycogen in the tissues and asci of ascomycetous fungi and also in *Linum* and *Solanum*. He has established completely the identity of the glycogen in *Peziza vesiculosa* (which he has studied most closely) and that of the mammalian liver. When not in too small quantity plant glycogen may be detected by its reaction with iodine, giving a brownish red color which disappears on heating and reappears on cooling. The discovery of the existence of this carbo-hydrate in plants breaks away another of the attempted absolute distinctions between plants and animals. Glycogen seems to perform the same functions in both organisms.

PROFESSOR DOUGLASS H. CAMPBELL, of Ann Arbor, has been showing the development of the male prothallium of *Equisetum arvense*, and recommends its use by laboratory students as a plant that is